

FEU 07 – Preparation and Storage of Reagents

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1. Scope

- 1.1. This standard operating procedure is structured to ensure that reagents are labeled correctly and records are maintained identifying who made the reagents and the components used in the preparation.

2. Background

- 2.1. To establish the practices for documenting the examination of firearm evidence to conform to the requirements of the Department of Forensic Sciences (DFS) Forensic Science Laboratory (FSL) Quality Assurance Manual, the accreditation standards under ISO/IEC 17025:2017, and any supplemental requirements.

3. Safety

- 3.1. All chemical testing, to include mixing of chemicals, requires the use of gloves, a disposable lab coat, and eye protection.
- 3.2. Mixing of chemicals requires the use of a disposable lab coat, worn so that no skin is exposed between the coat sleeves and gloves, and safety goggles; additionally the use of an N95 respirator mask is recommended.
- 3.3. Mixing of chemicals and chemical testing must be performed inside the fume hood.

4. Materials Required

4.1. Not Applicable

5. Standards and Controls

5.1. Not Applicable

6. Calibration

6.1. Not Applicable

7. Procedures

7.1. General

7.1.1. The Reagents Coordinator will conduct quarterly checks to ensure that reagents are prepared, labeled correctly and within expiration dates:

7.1.1.1. Identity of reagent

7.1.1.2. Date the reagent was prepared

7.1.1.3. Lot or Batch Number

7.1.1.4. Expiration date

7.1.1.5. If applicable, storage requirements

7.1.2. The Reagent Coordinator will also update the Chemical Inventory.

7.2. Safety Data Sheets (SDS)

7.2.1. All reagents must have their SDS present in hard copy in the lab. Electronic copies should also be available and accessible in the network drive. SDS are updated when new reagents are received.

7.3. Labeling and Preparation of Reagents

7.3.1. All reagents must be labeled with the date received, initials of the person who received it, initials of the person who opened it, and (if the reagent is open) the open date and expiration date. Commercial reagents without a supplied expiration date will be given a date three (3) years from the date of opening. Unopened chemicals are not subject to an expiration date unless indicated by the manufacturer.

7.3.2. Reagents will be mixed only by personnel with competency memos to perform the specific mixing and associated testing. Reagents prepared in

the FEU will be labeled with, at a minimum, the identity of the reagent, batch number (which will be the date of preparation, the initials of the preparer, and the date of expiration). Expiration dates for internally mixed reagents will be one (1) year from the date of preparation, unless otherwise determined.

7.3.3. The Chemical Preparation Log will be completed contemporaneously with preparation with the following information:

7.3.3.1 Reagent identity

7.3.3.2 Preparer's initials

7.3.3.3 The date of preparation

7.3.3.4 Batch number

7.3.3.5 Volume prepared

7.3.3.6 Results of control check

7.3.3.7 Date of expiration

7.3.3.8 Room number of the Storage Hood (if reagent is retained for future use)

7.3.4. Reliability testing of reagents will occur before use or if appropriate, concurrent with the test. Discipline specific procedures may establish additional requirements regarding the preparation of reagents.

7.3.5. The Chemical Inventory will be kept updated on the Firearms network drive, and all reagents necessary to perform serial number restoration will be indicated as "critical".

8. Sampling

8.1. Not Applicable

9. Calculations

9.1. Not Applicable

10. Uncertainty of Measurement

10.1. Not Applicable

11. Limitations

11.1. Not Applicable

12. Documentation

12.1. FEU-LOG-01 Chemical Preparation Log

12.2. Chemical Inventory spreadsheet

13. References

13.1. ISO/IEC 17025:2017 – General Requirements for the Competence of Testing and Calibration Laboratories, International Organization for Standardization, Geneva, Switzerland

13.2. FSL Quality Assurance Manual (Current version)